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# INSANITY;

ITS ETIOLOGY, DIAGNOSIS, PATHOLOGY, AND  
TREATMENT, WITH CASES ILLUSTRATING  
PATHOLOGY, MORBID HISTOLOGY,  
AND TREATMENT.

BY

EDWARD C. MANN, M.D.,

MEDICAL SUPERINTENDENT OF STATE-EMIGRANT INSANE ASYLUM,  
WARD'S ISLAND, NEW YORK.

[REPRINTED FROM THE N. Y. MEDICAL JOURNAL, DEC., 1874.]

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WITH ADDITIONS BY THE AUTHOR.



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FROM the earliest period in the history of medicine, mental diseases have been recognized, more or less classified and treated, as a rule, as worthy of the utmost attention that science and humanity could dictate. As far back as the days of Hippocrates, insanity was recognized as appearing under different forms and conditions of mind. Hippocrates, in writing of insanity, mentioned three states in which mental disease was manifested: mania, melancholia, and dementia. Celsus also recognized three kinds of insanity. The old Roman laws divided the insane into two classes: *furiosi*, those who were violent and maniacal; and *mente capti*, those who were suffering from dementia, or weakness of intellect. The ancient writers, although very crude in their ideas of insanity, recognized, as a rule, the different mental states accompanying mania, melancholia, and dementia. Different writers, in modern times, have attempted various methods of classification; but the simple and yet comprehensive one of Pinel has really been the foundation-stone on which all succeeding writers have reared their modern systems of classification. The classification just alluded to includes the four great primary mental states or conditions of insanity, namely: mania, melancholia, dementia, and idiocy. As most writers on insanity prefer to enlarge on such simple classifications, and elaborate them somewhat, the question arises, What are the best grounds on which to found our classification? This question has been ably answered by many writers.



The etiology, or causes of insanity, has been made the basis of two very excellent classifications; the first, by Dr. Morel, in his "*Traité des Maladies Mentales*," published in 1860; and the second, a later and more elaborate one, by Dr. Skae. The International Congress of Alienists, at their meeting in Paris, in 1867, adopted a combination of the etiological and symptomatological methods under seven heads: 1. Simple Insanity; 2. Epileptic Insanity; 3. Paralytic Insanity; 4. Senile Dementia; 5. Organic Dementia; 6. Idiocy; 7. Cretinism. Drs. Bucknill and Tuke, in their "*Manual of Psychological Medicine*," third edition, 1874, have adopted a combination of the symptomatological and psychological method of classification. They have divided it under five heads, or divisions, as follows:

I. Idiocy, Imbecility, and Cretinism; states of undeveloped intellectual power.

II. Dementia; a state in which the intellectual power has been destroyed.

III. Delusional Insanity; under which head they embrace all the states in which marked delusions are present; melancholia, with delusions; monomania, with delusions; and homicidal and suicidal insanity, with delusions.

IV. Emotional Insanity, or morbid states of the emotions, without delusion, whether attended by melancholia or excitement.

V. Mania. In conclusion, it is remarked that "all these forms or varieties of insanity are liable to complication with epilepsy, or, if acquired, with general paralysis."

These classifications are for the most part excellent for study; but, for actual practice, the simpler the classification the better for the general practitioner.

**Etiology.**—Insanity grows out of a violation of those physical, mental, and moral laws, which, properly understood and observed, result not only in the highest development of the race, but in the highest type of civilization. During the past twenty years there has been a decided increase of insanity in our country, disproportionate to the increase of population. In the foreign element this is due to

marked changes in habits of living, the changes in food, increased intemperance, working more in-doors, living in badly-ventilated tenements, and disappointments at not succeeding at business, etc., as they had expected to do in America, which are causes, all of which combined, tend to impair health, break down the nervous system, and tend insensibly toward insanity in the offspring. The increase of insanity among our own population is due largely to a change from a vigorous well-balanced organization to an undue predominance of the nervous temperament, which is gradually taking place in successive generations. The educational pressure on the young to the neglect of physical exercise, the increasing artificial and unnatural habits of living, the great excitement and competition in business, are all tending to induce and multiply nervous diseases, many of which must terminate in insanity. These causes, and the evils resulting from them, are propagated by the laws of inheritance in an aggravated and intensified form. It is an interesting fact, which I have observed from an extended examination of the reports which have been sent to me from the various insane asylums of our country, many of which I have examined from the commencement of such institutions up to the present time, that insanity is appearing gradually at an earlier age than formerly. These reports show that in former years the average period at which the greatest number became insane, ranged between the age of thirty and forty, but an analysis of statistics shows that this average age is coming on at an earlier period of life, generally appearing between the years of twenty and thirty. This is supposed, by the highest authorities, to be owing to hereditary influences, which have gradually become intensified by violation of physical laws in early life, want of proper training, or too high pressure in education. From these preliminary remarks, we proceed to the investigation of the predisposing and exciting causes of insanity. The first and great predisposing cause is, hereditary predisposition. This has been noticed from the earliest history of the study of insanity. Esquirol observed and traced hereditary predisposition in about one-fourth of all his cases of in-



sanity. Guislain estimated hereditary predisposition at thirty per cent. of all cases of insanity. Michéa gave the opinion that at least one-half if not three-fourths of all the insane have either had at some past time, or have at the present time, some cases of insanity in their families. At the York Asylum, during twenty-seven years, from 1846 to 1872, hereditary disposition was traced in thirty-one per cent. of all the admissions. With regard to hereditary predisposition, it has been determined that, as a general rule, if the mother is insane, the disease is more frequently transmitted to the offspring than if the father be affected ; and also, the mother's influence in transmitting insanity to girls is much more to be dreaded than if the offspring be a boy ; likewise, as regards the father, insanity being much more certain to appear in male offspring, the father being affected, than in the female. There are, of course, many exceptions to this rule : but the laborious researches of M. Baillarger have been accepted by the best authorities as highly probable, if not conclusive. It has also been proved that the lower forms of insanity, as imbecility, and also depression of mind, are in a marked degree hereditary. It has been remarked that the outbreaks of insanity, in persons who inherit a predisposition to it, generally make their appearance, and seem to be in some manner connected with, the growth and processes of evolution of the individual, at the periods of puberty, childbirth, climacteric period, etc.

Most people ignore the law of progressive development, and find it difficult to believe that an attack of insanity, coming on in maturity, may have originated in the parent or grandparent, in whom it gave very little, if any, appreciable trace of its existence. Yet this is a fact, and insanity is often the result of a lowered vitality or abnormal organic development of the nervous system, that has descended from generation to generation, gaining in intensity until it manifests itself by an outburst of insanity in children. One very important organic law, which should be universally understood, is, that morbid impulses and characteristics and insane traits may disappear in the second generation, and break out with re-



newed intensity in the third. It is doubtless true, however, that a tendency or predisposition to mental disease may be transmitted to the offspring, and under good hygienic and other favorable conditions, die out, and fail to be transmitted any further.

Insanity also may appear either in the same form in succeeding generations, or it may assume an entirely different form of insanity, or even of nervous disease. Thus, it is common to see cases in which, the parent suffering from mania, the offspring may develop symptoms of epilepsy or chorea. Some authors have held that nothing was transmissible to the offspring but an aptitude, or predisposition, to some disease of the nervous system, and that the development of any particular type or form of nervous disease was largely the result of circumstances subsequent to birth. The diseases most frequently presenting themselves as the result of hereditary predisposition have been found to be, aside from the typical forms of insanity, hypochondriasis, apoplexy, paralysis, epilepsy, convulsions, chorea, hysteria, and neuralgia. Undoubtedly, next to hereditary predisposition, may be ranked, in the present day, as a predisposing cause of insanity, the great mental activity and strain upon the nervous system that appertain to the present age and state of civilization. The same feverish haste and unrest which characterize us as a nation to-day, and the want of proper recreation and sleep, tend to a rapid decay of the nervous system, and, sooner or later, the most overworked and overstrained minds stagger beneath the excessive burden; and, one by one, brilliant intellects and sterling men are lost to the world, who, if they had exercised moderation in their respective pursuits, might have been spared for years to enjoy the fruits of their industry. Among other predisposing causes may be mentioned those included by the International Congress of 1867, namely, great difference of age between parents; influence of sex; of surroundings; convulsions, or emotions of the mother during gestation; epilepsy; other nervous diseases; pregnancy; lactation; menstrual period; critical age; puberty; intemperance; venereal excess; and onanism. Among the exciting causes of insanity may be

mentioned—trouble, and excessive grief; intemperance; excessive excitement, of whatever kind; epilepsy; disordered functions of menstruation; pregnancy; parturition; lactation; fevers; injuries to the head or spine, and overwork.

**Intemperance.**—It is impossible to estimate the complex influences that intemperance exerts upon the production of insanity. All observers agree that it is intimately connected with, and is one of the main exciting causes of, insanity. Lord Shaftesbury, in his evidence before the Select Committee on Lunatics, in 1859, expressed his opinion that fifty per cent. of the cases admitted into English asylums are due to drink. Many superintendents of foreign asylums have estimated the admissions from intemperance at twenty-five per cent. or higher, including not only the proximate, but remote cause of the disease. This percentage will be largely increased if we take into account the great number of cases in which the intemperance of parents causes the insanity or idiocy of their offspring. I have traced intemperance as a cause, in a great many cases of general paralysis that have come under my care, and other superintendents of insane asylums have observed the same thing. M. Lunier estimates that fifty per cent. of all the idiots and imbeciles to be found in the large cities of Europe have had parents who were notorious drunkards. Of 350 insane patients admitted during two years at Charenton, in Europe, insanity was attributed to drink in 102 instances. We have three forms of insanity resulting from the abuse of alcohol, either in the individual himself or his progenitors, and these should, I think, be all included under the general term of alcoholic insanity. As this term is, at present however, synonymous with ~~chronical~~ alcoholism, we must find some more fitting term, I suppose, to include these three manifestations. They are as follows: First. Delirium tremens or mania a potu, which is the acute and temporary form of mental derangement caused by intemperance. Secondly. Dipsomania, which is characterized by an irresistible impulse to indulge in alcoholic stimulants—an impulse which the intellect seems powerless to control, being overborne by the superior force derived



from disease. It becomes, therefore, properly speaking, a form of moral insanity. It appears under three forms—acute, periodic, and chronic. Third, and last, we find the condition known as chronic alcoholism, which is a peculiar form of chronic insanity. Excluding the symptoms of delirium tremens, which are too familiar to bear repetition, we have in the other two forms of insanity from intemperance, hallucinations of sight and hearing, confusion of thought, perversion of feelings, suicidal tendencies, tremor of the facial muscles and tongue, at times anæsthesia of the extremities, with paralytic symptoms, ending in general paralysis. It is a fact of importance that the children of habitually intemperate parents often inherit a predisposition to mental diseases, which generally appear in the form of weakened mental faculties, as in dementia, or that they are entirely wanting, as in idiocy. Domestic troubles and griefs are a frequent cause; and it is roughly estimated that from twelve to fifteen per cent. of admissions are from this cause. Under the head of exciting causes are also included physical causes, as artificial deformities of the cranium, organic disease of the brain, etc.

When we see how readily and inevitably the future mental state and characteristics of the next generation are determined by the health and proper mode of living of the present one, it behooves all physicians, who, perhaps, more than any class of men, are placed in the closest and most confidential relations to their fellow-men, to endeavor to promote such modes of living and thinking, that the descendants of the present generation may be the gainers, and not the losers, by their advice. The very mental states and emotions of a pregnant woman are indelibly impressed upon the offspring; and how important it is that the condition of such a woman should be expressed by the old motto, *Mens sana in corpore sano*! Herbert Spencer, in speaking of the emotions, remarks: "We know that emotional characteristics, in common with all others, are hereditary; and the differences between civilized nations, descended from the common stock, show us the cumulative results of small modifications heredi-

tarily transmitted. And, when we see that between savage and civilized races, which diverged from each other in the remote past, and have for a hundred generations followed modes of life becoming ever more unlike, there exist still greater emotional contrasts, may we not infer that the more or less distinct emotions which characterize civilized races are the organized results of certain daily repeated combinations of mental states which social life involves? Must we not say that habits not only modify emotions in the individual, and not only beget tendencies to like habits and accompanying emotions in descendants, but that, when the condition of the race makes the habits persistent, this progressive modification may go on to the extent of producing emotions so far distinct as to become new; and if so, we may suspect that such new emotions, and by implication all emotions, analytically considered, consist of aggregated and consolidated groups of these simpler feelings, which habitually occur together in experience; that they result from combined experiences, and are constituted of them?"

**Diagnosis of Insanity.**—There is probably no disease which presents greater difficulties in the way of diagnosis, than insanity. In most diseases we examine physical signs and symptoms, and we determine by our senses the existence of such diseases. In insanity, on the contrary, we have to be guided chiefly by our knowledge of the normal functions of the mind, and in our examination we have to rely on our intellect rather than on our senses, although of course the latter are called in to assist us. It is, however, very often extremely difficult to decide with certainty, as we are expected to do, as to the existence of mental disease, and we assume a great responsibility, whichever way our decision may be given. We either give the patient liberty to take his place in society, and thus expose society to the consequences if he prove to be insane, or we place him in confinement in some institution for the treatment of the insane, thus depriving him of his liberty, and his family of his support. It becomes, then, a matter of great importance to decide rightly as to the existence of mental disease, for if this is not prop-



erly done, we shall expose ourselves to the risk of great mortification, and also to the loss of professional reputation. Before going to see a patient who is to be examined for the existence of insanity, it is advisable to find out all one can from the friends and relatives; but in accepting such statement, it is wise to allow a wide margin for their information in regard to hereditary predisposition, as most people, foolishly considering the existence of insanity in their family a disgrace, will pertinaciously conceal and deny this fact both from themselves and from their medical adviser. Another reason for this concealment may be, that the members of such families are not infrequently odd and eccentric in their behavior, even when perfectly sane, and do not care to have their peculiarities attributed to hereditary taint of insanity, and therefore endeavor to mislead their physician on a point which is to him of the utmost diagnostic importance. Indeed, this and the question of previous attacks are perhaps the two most important points in the diagnosis of any given case.

We should endeavor, when we are called to our patient, to gain his confidence, and from a general conversation lead him cautiously to his state of health and mental feeling. If we are abrupt and wanting in tact we shall probably defeat our object, and the patient, if displeased, will either refuse to listen to, or answer our questions, or will become very angry at our conspiring to deprive him of his liberty. If we are fortunate enough to get a history of the patient, we can generally determine easily the existence or non-existence of insanity, by the patient's appearance and conversation. Many times, however, we have to rely alone on the conversation, general appearance, and conduct of the patient, unaided by any other resources. After having gained our patient's confidence, and having drawn him into a pleasant conversation, we should first inquire about previous attacks, then into his hereditary history, then into any predisposing causes, such as intemperance, vocation, habits, etc., which may have operated in the production of insanity. Also as to injuries to the head or spine which may have occurred,

sunstroke, etc. We should then systematically, but carefully and cautiously, examine into the vegetative and reproductive functions, and then carefully examine the nervous system for the existence of any lesions such as paralysis, epilepsy, catalepsy, hysteria, and allied affections. We should next examine the different senses, beginning with sight, and in this way we shall find out if our patient has good vision, if the retina is normal, and, what is more important, we may discover if he has hallucination or illusions pertaining to this sense. We may then proceed to the sense of hearing, examining for deafness and also to discover any hallucination or illusions of hearing. Proceeding to the sense of smell, we shall discover if it is normal, and also if there are any hallucinations or illusions connected with it. Taking up the sense of taste, we may inquire as to the existence of hallucinations or illusions. Patients often complain of their food being poisoned, or that they are eating injurious and hurtful things with their food. The last of the senses, that of touch and nervous sensibility, may be examined for imaginary sense of pain, the existence of reflex action, hyperæsthesia, and lastly, for hallucinations and illusions pertaining to this sense or referring to internal organs of the body. The mental symptoms unconnected with the special senses and pertaining to the intellect, the emotions or the will, may finish the examination.

Whether the diagnosis of insanity presents itself to the physician in a purely medical or in a medico-legal point of view, the principles of diagnosis are the same, and we must pursue our examination in precisely the same manner. The first thing we are generally called upon to decide is, whether the patient can be treated at home or whether it is necessary to place him in an asylum, and we are also probably asked for a prognosis, which latter cannot be too guarded, whatever may be our own impression at the time about the patient. Let us consider for a moment the first question, that of the propriety of removing our patient to an asylum. Insane patients are, by the very nature of their disease, inclined to do mischief. The



them vivid realities, and no one knows what they may consider it right and proper to do, when they are under the influence of such delusions.

Some of the most fearful crimes have been committed by those who had previously been regarded as harmless patients, and no one therefore should take upon himself the responsibility of advising that a patient whom he is called to see should be kept at home. The mere moral effect of a residence in a well-regulated asylum for a time, at the onset of insanity, has an immense effect on the mind of a patient, and may prevent, perhaps, consequences that might prove most disastrous, were he to be at home and exposed to the many causes of excitement from which he is sheltered in an asylum. We must also decide what form of insanity the patient is laboring under, and in a medico-legal case must give our diagnosis as to the insanity of the patient in its relation to his civil capacity, and responsibility for criminal actions, and also as to feigned and concealed insanity. In this latter class of cases, medico-legal cases, it is of the utmost importance for every physician to understand that a man is not irresponsible for crimes which he commits from the fact that some of his ancestors have been insane. The question to be determined here is whether the hereditary taint, by being transmitted to the individual in question, has influenced or determined at all his volitions, impulses, or acts. If on the one hand he has been noticed for displaying such peculiarities as usually proceed from hereditary taint, and if the crime was apparently unaccompanied by any adequate incentive, doubts of his legal guilt are then to be carefully considered. On the other hand, if the criminal act appears to have been rationally performed, and with some adequate and usual incentive, and if the individual has previously been free from mental infirmities or peculiarities that might be attributed to hereditary transmission, then we cannot justly advance insanity as a plea for defense from the consequences of crime. The diagnosis of insanity is at times very easily made. Thus if we find our patient, from having been previously moral, affectionate, and industrious, has become immoral and dissolute, exhibits alienation of

affections, and neglects his business, all without adequate cause, it is of course easy to determine his insanity, although of course changes may take place in the character of individuals without any suspicion of insanity being excited. A great many cases, however, are on the border line which separates sanity from insanity, and it often requires the nicest discrimination to determine whether such a patient shall be placed under treatment or not. It now remains to consider the diagnosis of the different forms of insanity which we meet with. In mania the physiognomy is generally distinctive. The countenance is furrowed, the eye wild and vacant, and there is generally a peculiar want of agreement in the expression of the features. The hair often becomes harsh and bristling, and the ears may become shriveled. The actions, demeanor, and dress of an insane patient are generally indicative of mental peculiarities, and oftentimes the latter may be indicative of the nature of the patient's delusions, or, if not, it may display marked eccentricity. In acute mania it is generally easy to discern in the countenance the presence of some strong emotional characteristics, such as pride, hatred, or anger. It has been remarked that insanity anticipates the effects of years, and prematurely imprints upon the countenance the facial lines characteristic of habitual emotions, while in lunatics of advanced age, these are observable in a greater degree, and are more deeply marked than they ever are in sane persons. In this form of insanity the bowels are generally constipated, the urine is loaded with phosphates, and the patient suffers from that protracted loss of sleep which is diagnostic of acute mania, and which is a symptom that cannot be feigned by an impostor. Patients of this class pass several days without sleep, and sometimes weeks with but a few hours of sleep in the course of the whole time. Hallucinations of sight and hearing are far more frequent in this than in any other form of insanity. There may be also rapidly changing delusions, and there is generally an intense muscular restlessness, which manifests itself either in destructive impulses, or in continual motion, which rapidly induces dangerous exhaustion,



if not properly treated. In melancholia, the most noticeable symptoms will be despondency, fear, and despair, and the expression of their mental states are depicted in an unnatural degree of intensity upon the countenance of the patient. The patient generally wishes to be alone, is gloomy and depressed, has delusions of fear and persecution, imagines he has committed unpardonable sins, and in the acute cases of melancholia no more pitiable spectacle can be imagined, and the expression of terrible apprehension and fear which occupies the countenance is not easily forgotten. The skin is generally dry, harsh, and muddy, and the bowels constipated. It is such cases as these which have to be carefully watched, lest they give way to the suicidal tendencies which are generally present. In dementia, the lines of expression are more or less obliterated, and the vacant, meaningless expression and smile or laugh are indicative of this form of insanity. When the mind is tested, the power of memory, attention, and comparison will be found to be partially or entirely wanting. It is only in primary dementia that the practitioner will find difficulty in reaching a decision, and sometimes these cases are very difficult to determine. In such cases, one of the most valuable symptoms is loss of memory. The patient may, in his conduct and conversation, exhibit no marked peculiarities, but when the powers of his mind are tested as to the recollection of past events, or even as to the conversation of a few minutes previous, it will be found that he has entirely forgotten these things. This form of insanity is generally unaccompanied by hallucinations or delusions, and is nearly always due to some exciting cause, such as injuries to the head, and attacks of apoplexy, and strong emotional disturbances. There is another variety of dementia which is secondary to acute attacks of insanity, and which differs somewhat from primary dementia. In this form of dementia we meet with the remains of the delusions of acute mania, and we also find an exaggerated state of emotional feeling which remains after the storms of acute mania have blown over, and the functions of the mind are beginning to suffer decay.

The diagnosis of general paralysis is very easy, after we have become acquainted with the disease.

In the early stage, the most marked symptom is a thick-ness of articulation particularly noticeable when the words articulated by the patient are composed of several consonants, when these will be shuffled over in a very characteristic manner. The lips of the patient while he is speaking will be seen to tremble, and likewise the tongue, if it is protruded from the mouth. The gait of these patients is very peculiar and characteristic of paresis. They shuffle along in a manner that denotes at once the want of co-ordination in the muscles of the limbs. Later in this form of insanity the power over the sphincters is lost, the patient has to be cared for like an infant, and becomes a great trouble to his attendants. There is another class of patients whose only manifestation of insanity consists in an abnormal condition of the moral power, and who exhibit no obvious intellectual aberration or impairment. The symptoms of the mental disease in these cases are limited to the exhibition of morbid impulses, which the intellect seems powerless to control. These cases of moral insanity are sometimes difficult to distinguish, and the laity generally attribute such manifestations to total depravity. In such cases, we must compare the patient with himself when in a state of health, and not with any imaginary standard of sanity or insanity. We should bear in mind in this class of cases the excellent definition of Dr. Combe, who says: "It is the prolonged departure, without any adequate external cause, from the state of feeling and modes of thinking usual to the individual when in health, that is the true feature of disorder of mind."

We have thus far considered the diagnosis of insanity only in its relation to the existence of the disease. Let us finally look at the diagnosis of recovery, which oftentimes becomes a very delicate and difficult task for the examiner. We are to determine whether the patient has recovered so far as to leave no trace of insane ideas and delusions. We must compare the man with his former self in a measure, and see if his natural tastes, affections, impulses, and mental powers

have been restored. Of course, we must make an allowance for a certain amount of weakness in his intellectual functions, just as we expect to find a man weak bodily, after an attack of typhoid fever or other severe disease. We must determine whether the man's intellectual faculties, his memory, reason, and judgment, are in a state to enable him to take his place and position in active life. We must observe also whether his conduct is reasonable and quiet. In homicidal or suicidal cases we must assure ourselves of the disappearance of the propensity. There are many patients who, although not recovered, are in such possession of their intellectual faculties as to become very impatient of restraint and confinement, and no amount of reasoning can make them appreciate the necessity for further detention in an asylum. A marked case of this character is at the present time under our care, and illustrates forcibly this class of cases, who, were they to be exposed to the excitement of society, before a thorough cure has been effected, would almost inevitably have a relapse.

This patient will argue for an hour at a time very sensibly and forcibly upon the injustice and oppression of keeping him longer in an asylum, and will challenge any proof of his insanity, and probably nine out of ten physicians not acquainted with him would say the man was sane. He will converse rationally upon all topics of conversation until the subject of religion is introduced, when he immediately reveals gross delusions, and maintains with the utmost sincerity that he can perform miracles, and that he is frequently the subject of them. This shows the importance of examining a patient upon all conceivable topics before pronouncing him cured. These are the cases that generally make their friends and relatives, and particularly strangers, feel that they are unjustly detained, and are the ones who, if they obtain their release in any way, publish their wrongs, and create in this way ill-founded prejudices against institutions for the care of the insane. Generally speaking, if a person who has been insane expresses himself as having been unjustly treated and detained, and denies the fact of his insanity, we may be



pretty sure that he has not fully recovered, as persons who are really convalescent are generally fully convinced that they have been insane and are generally very grateful for the care and attention that have been bestowed on them, and express themselves so. Such patients are nearly always willing to be guided by their physician's opinion as to the proper time for their discharge, and do not, as a rule, exhibit that intense restlessness and desire to return home, which is so apt to characterize doubtful recoveries.

The first symptoms of recovery are the return of natural tastes, inclinations, and affections in the patient. Drs. Bucknill and Tuke, in speaking of symptoms of recovery, lay down the following as evidences of restoration of the mind: 1. A natural and healthy state of the emotions; 2. The absence of insane ideas or delusions; 3. The possession of sufficient powers of attention, memory, and judgment, to enable the individual to take his part as a free member of society; 4. Tranquil and reasonable conduct, and say regarding them "When these four symptoms of recovery coexist, there can be no doubt that recovery has taken place."

**Prognosis.**—The prognosis of insanity is a question of much interest, and is often a very difficult point to determine. The cases most unlikely to recover are those in which the insane temperament or diathesis is clearly manifested, and who inherit a predisposition to disease. Such patients, although they may have lucid intervals, rarely if ever entirely recover. The other types of insanity in which we rarely see cures, are imbecility and idiocy, dementia, general paralysis (which is one of the varieties least amenable to treatment) and epileptic insanity. On the other hand, acute mania, acute melancholia, hysterical insanity, and puerperal insanity, not unfrequently completely recover.

**Pathology of Insanity.**—Owing to the great difficulty and labor incident upon making a thorough examination of the brain in cases of insanity, the pathology of insanity is as yet in its infancy; but already valuable information has been obtained by microscopical investigations, and much more will doubtless be discovered in a few years of microscopical

research. Regarding the existence of morbid changes in the brain accompanying mental disease, Portal wrote as follows: "Morbid alteration in the brain and spinal marrow has been so constantly observed, that I should greatly prefer to doubt the sufficiency of my senses, if I should not at any time discover any morbid changes in the brain, than to believe that mental disease could exist without any physical disorder in this viscus, or in one or other of its appurtenances." M. Parchappe, the Inspector-General of Asylums in France, has made very careful and thorough investigations regarding the pathology of insanity, and published the following conclusions: That the pathological changes met with in insanity may be divided into three classes: those which may be considered accidental; those which are found in other diseases, yet appear to be concerned in the production of insanity; and, lastly, those which he considers as essential to mental disease. Among the first he mentions cerebral hæmorrhages, softening of the white substance, and disease of the cerebral arteries. Among the second, thickening and opacity of the arachnoid, hyperæmia of the pia mater and of the brain, serous infiltration of the pia mater, and collections of fluid in the arachnoid cavity. Under the last head, or the changes considered essential to mental disease, he mentions subarachnoid ecchymosis, and a partial punctiform injection of the cortical surface, with or without softening; extended softening of the middle portion of the cortical substance; adherence of the pia mater to the surface of the brain; rose, lilac, and violet-colored discoloration of the cortical substance; loss of color of the cortical substance; atrophy of the convolutions and induration of the brain. In conclusion, M. Parchappe remarks that in acute insanity the prominent alterations are hyperæmic conditions, with arachnoid ecchymoses and injection and softening of the cortical substance; while in chronic insanity the predominant alterations are atrophy of the convolutions and induration of the two substances. Griesinger, the eminent Berlin pathologist, gives, as the result of his labor in the pathology of insanity, the following morbid conditions: hyperæmia of the brain and membranes, thickening and opacity of

the membranes, softening of the cortical substance, and pigmentation of the cortical gray substance in acute insanity; while in chronic insanity the principal lesions he noticed were opacity and thickening of the membrane, atrophy of the brain, particularly of the convolutions, chronic hydrocephalus, effusions into the subarachnoid space, pigmentation of the cortical substance, and extended and profound sclerosis of the brain. He remarks that in chronic insanity softening is not so frequently met with in the superficial layer as pigmentation, superficial induration and adhesion of the pia mater.

**Histology.**—The microscopical investigations of the histologists of the present day have done a great deal in revealing the morbid histological changes which take place in insanity. Regarding the condition of the membranes, it has been found that, while the dura mater is rarely thickened, its vessels are dilated and irregular, and that the coats of the vessels are much hypertrophied. The arachnoid has been found by Meyer to be often covered with fine granulations on its surface, and it has also been found to be the seat of hæmorrhage, and also thickened. The pia mater has often been found thickened, and a hyaline appearance has been noticed around the vessels, which has been attributed in part to the action of reagents. Dilatation of the vessels has also been noticed. In a microscopical preparation, from a case of chronic insanity, in the possession of the writer, the thickening of the pia mater is very marked, and a cut vessel presents very beautifully the marked thickening of the coats. The brain-substance in the same specimen is seen to be dilated where it surrounds the vessels. In another preparation, from a case of chronic mania, the only abnormal appearance is a deposit, scattered throughout the brain-substance, of newly-formed cells containing a nucleus and nucleolus, which show very clearly when viewed with a quarter-inch objective, carmine staining having been employed. The pathological changes observable at the *post-mortem* examination of this case were atrophy of the brain and convolutions, and partial sclerosis of the brain, with thickening of the membranes and slight subarachnoid effusion.



The blood-vessels of the brain have been found to present thickening of the coats, thickening of the sheath or hyaline membrane, deposits between the adventitia and sheath, and proliferation of nuclei. The neuroglia has been found to be the seat of various lesions in insanity, the principal of which are disseminated sclerosis or gray degeneration, atrophy, miliary sclerosis, and colloid degeneration. The cells are the seat of atrophy, pigmentary, granular, or fuscous degeneration, calcification, and hypertrophy. Microscopical examination of the spinal cord in the insane has not revealed any particular lesion except in general paresis. Dr. Westphal describes an atrophied condition of the cells of the posterior columns in general paresis and an increase of the connective tissue, commencing externally and extending inward. Dr. Tuke says that, in most cases of general paralysis which he examined, the cells of the cord were found undergoing the fuscous, granular degeneration before alluded to as affecting the cells of the hemispheres and corpora striata. The cells of the cervical sympathetic have also been found undergoing pigmentary granulation in general paralysis, and also in other forms of insanity.

#### Cases Illustrating Pathology and Morbid Histology of Insanity.

CASE I.—*Mélancholia* with delusions. Death resulting from chronic meningitis. C. Mc., male, aged 44 years, single; occupation, porter. Upon admission, May 5th, 1874, was noisy and maniacal. This state lasted but a few days, and he then became depressed and melancholy. He refused food for a few days, and had to be fed artificially. The *mélancholia* assumed an acute form, and he had hallucinations of sight and hearing, causing at times great terror and mental excitement. At such times, when he imagined that he saw devils in the ward, his face would assume an aspect of the utmost fear and distress. He often expressed a wish to commit suicide. He died quite suddenly, August 25th, 1874, having eaten and slept but little for some days previous. Post-mortem: Upon removing the calvarium, the *dura mater* was found to be adherent to it; the

pia mater was thickened, infiltrated, and hyperæmic; the arachnoid was clouded and covered with granulations; the brain was hyperæmic, and the cortical substance softened; the lateral ventricles were filled with fluid; the lungs revealed commencing tuberculosis; the kidneys, spleen, and liver, normal.

CASE II.—M. H., male, aged 31, single, and by occupation a laborer. Admitted to asylum Jan. 17th, 1874, with melancholia. Had delusions of fear and persecution, and had suicidal impulses. Often refused food, saying he wished to die. The mental faculties were very feeble, and the enfeeblement gradually increased. The bladder became paralyzed, and the health gradually failed up to September 25th, 1874, when he died from exhaustion. Post-mortem: The membranes were found to be adherent to each other, and the pia mater was thickened and adherent to the surface of the brain. Throughout the brain were small miliary tubercles; the substance of the brain was softened near the base; there was also considerable effusion about the base of the brain, and effusion in the lateral ventricles; lungs normal, kidneys congested, spleen, liver, and heart normal.

CASE III.—Melancholia, with religious delusions and hallucinations of sight and hearing. Death resulting from acute tuberculosis and rupture of pulmonary artery. J. S., male, aged 20, single; occupation, laborer. Admitted to asylum June 20th, 1874. Upon admission, was in poor physical condition, having never regained his strength since an attack of pneumonia some months previous. There was dullness at the apices of both lungs, and a prolonged expiratory murmur, with difficult respiration. He was very depressed and melancholy, and said that he had committed unpardonable sins, and should be eternally lost. At night he imagined he was visited by evil spirits, who tormented him. He died suddenly, October 14th, 1874. Post-mortem: Dura mater firmly adherent to skull; meninges congested, and vessels enlarged; brain revealed softening of cortical substance and effusion of fluid in lateral ventricles. Examination of lungs revealed the existence of miliary tuberculosis. The upper

and middle lobes of the right lung were partially destroyed, and the sudden death was found to be the result of rupture of the upper branch of the right pulmonary artery in the middle lobe of the right lung.

CASE IV.—Dementia and paresis. Death resulting from pulmonary hemorrhage. T. A., male, aged 22, single; occupation, wagon-maker. Admitted to asylum June 24th, 1874. Upon admission, was demented, with symptoms of paresis. Laughed vacantly when addressed, and stared unmeaningly about him. No appreciation of condition or surroundings. His gait was staggering, and lips and tongue were affected with muscular tremors. Never spoke but once, and that was upon the occasion of a visit from his brother. His speech at that time was hesitating and trembling. He had an attack of sub-acute meningitis in October, and died in January, from an exhausting hemorrhage from the lungs. Post-mortem: Membranes adherent to skull; subarachnoid effusion; large effusion between pia mater and brain; pia mater was thickened in patches. There was effusion at the base of the brain; fluid in spinal canal, and spinal cord atrophied. Miliary tuberculosis throughout the brain. Upon making an examination of the chest, the left lung was found to be partially destroyed by the breaking down of the caseous products of pneumonia, as a result of which, large cavities were formed. The heart gave evidence of recent endocarditis. The surface of the heart and endocardium were covered with miliary tubercles. The walls of the heart were atrophied, and exhibited traces of fatty degeneration; kidneys, spleen, and liver normal. Upon hardening the spinal cord, and making thin sections, and employing carmine staining, there was found to be, upon microscopical examination, atrophy and degeneration of the nerve elements of the posterior columns, with increase of connective-tissue. Sections of hardened brain-tissue being made, there was observable in the cerebral cells of the frontal convolutions, a diffused granular degeneration. No change could be discovered in the cells of the cervical sympathetic, which was carefully examined.



CASE V.—M. A. R., female, aged 29, single; occupation, servant. Admitted to asylum December 29th, 1873. Form of mental disease, dementia, ending in paresis. Speech was slurring and hesitating, and her gait was staggering, and mental faculties very much enfeebled. Would become very angry at trifling incidents, and then would relapse into silence, which lasted sometimes for weeks. She suffered from gradually progressing paralysis, which involved the sphincters of the rectum and bladder. The cutaneous and muscular sensibility was impaired, and likewise there was less of electro-muscular contractility, so that disease of the antero-lateral and posterior columns of the spinal cord was diagnosticated before death. The paresis was attributed to spinal injury received when quite young. She died from exhaustion, March 24th, 1874. Post-mortem: The dura mater was firmly adherent to the cranium; the pia mater was thickened and infiltrated, and the arachnoid thickened and opaque. The convolutions of the brain were atrophied, and the brain-substance indurated. There was fluid in the spinal canal, and the cord was slightly atrophied and softened in patches. The heart was small and flabby, spleen atrophied, stomach, liver, and kidneys normal. The uterus was in a rudimentary condition, apparently having never been developed properly. The spinal cord, after being hardened, and sections being made, revealed, upon microscopical examination, loss of neuroglia and connective-tissue, and degeneration of posterior columns, and loss of nerve tubules of white substance. The ganglion cells of both anterior and posterior cornua were disintegrated and atrophied, and granular and fatty matter occupied their place.

CASE VI.—Acute mania passing into dementia, with paralysis; death resulting from apoplexy. J. W., male, aged 27; occupation, student. Admitted to asylum April 30th, 1873, with acute mania. Upon admission was violent, requiring the restraint of a camisole. As soon as he became quiet, showed signs of dementia, and gradually became paralyzed. His mental faculties seemed entirely lost. He did not speak, required to be dressed and undressed, and put

to bed like a child, and led to the table for his meals, which he took from a spoon, which had to be put in his mouth by an attendant. On the morning of March 27th, 1875, he became suddenly comatose, and died in a short time. Post-mortem: The dura mater adherent to skull; arachnoid opaque and thickened; pia mater thickened and infiltrated, and the blood-vessels enlarged and varicose. A varicose vessel had ruptured, giving rise to extensive hemorrhage, which pressed upon both hemispheres, causing death. Brain atrophied and indurated; effusion at base of brain and in lateral ventricles. Upon examining the lungs there was found to exist a large cavity at the apex of the left lung; stomach, liver, heart, and spleen were normal. The kidneys were hypertrophied, and undergoing fatty degeneration.

CASE VII.—Dementia and epilepsy. Death taking place during a succession of paroxysms. O. M. S., male, aged 19, single; occupation, gardener. Admitted to asylum Sept. 29th, 1874, with epilepsy associated with mania, which preceded and followed the paroxysms, requiring, sometimes, mechanical restraint. Dementia soon resulted from the mental deterioration. Patient had epileptic fits nearly every day, which condition had been going on for years. Patient inherited a predisposition to epilepsy. During the mania he imagined himself to be the Emperor of Germany. The paroxysms increased in frequency and intensity until April 25th, 1875, in spite of all medication, when he had a succession of fits lasting thirty-six hours, in one of which paroxysms he died. Post-mortem: Membranes of brain thickened; arachnoid opaque; pia mater thickened; brain atrophied and indurated; lateral ventricles filled with fluid; spinal cord normal. Upon hardening the brain-tissue and medulla oblongata and examining microscopically, there was seen to be some vascularity in the fourth ventricle, which extended through the medulla, the capillary vessels of which were somewhat thickened and enlarged. The cervical sympathetic was carefully examined microscopically, but without satisfactory results.

CASE VIII.—Paresis and chronic meningitis. Death

resulting from exhaustion. R. B., male, aged 51; occupation, music teacher. Admitted to asylum January 26th, 1874. Upon admission was gloomy and depressed, with exalted delusions, at times alternating with the deepest melancholia. He gradually became more cheerful, but presented the symptoms of paresis; hesitating speech, slurring all the consonants; staggering gait, muscular tremblings, etc. Had been a hard drinker. Died May 20th, 1875, of exhaustion. Post-mortem: The calvarium being removed, the dura mater was adherent, the arachnoid opaque, and pia mater thickened and infiltrated; with enlarged and tortuous vessels. There was an effusion of lymph between the pia mater and brain, which had become organized. The brain was atrophied and indurated, and the gray matter of the convolutions much atrophied. There was considerable pigmentation of the cortical substance. The spinal cord was atrophied, and there was some fluid in spinal canal. The cord being hardened and examined microscopically, there was found atrophy and granular degeneration of the nerve-elements of the posterior columns, and a new formation of connective tissue. The membranes of the cord were thickened. The heart, liver, and kidneys, presented, at the autopsy, extensive fatty degeneration.

CASE IX.—Dementia, paresis, and tuberculosis. Death resulting from exhaustion. M. P., female, aged 23, servant. Admitted to asylum Sept. 30, 1873. Upon admission was depressed and melancholy, and in a delicate state of health. Became gradually demented and paralyzed. Physical exploration of the chest revealed pulmonary tuberculosis, with cavities at apices of both lungs. Patient died from exhaustion from paresis and tuberculosis, July 18th, 1875. Post-mortem: Brain anæmic, atrophied, and indurated. The spinal cord was about of a normal size, its membranes were thickened, and the pia mater opaque and thickened. The lungs presented extensive disease, the heart was small and flabby, and the kidneys atrophied and anæmic. Upon hardening the cord, the posterior and posterior section of the lateral column were found to be affected. The posterior col-



umns presented atrophy and disintegration of nerve elements and plates of connective-tissue in different places. In the postero-lateral column were granular and fatty corpuscles, and new bands of connective-tissue. It will be noticed that, in five out of the nine cases, there was pulmonary disease, and, as I remarked in the *New York Medical Record* of September 18, 1875, in an article on Consumption:

"It has been noticed that in a great many cases there exists a very close relation between tuberculosis and insanity. Esquirol was the first to note this fact, and it has since been commented upon by Schroeder van der Kolk and Dr. Clouston. In some cases phthisis has preceded insanity, and in other cases, and probably in the majority of those in which a close relation seems to exist, the development of the two diseases has been nearly contemporaneous. It has been noticed that the forms of insanity complicated with phthisis, exhibit a decided tendency to pass into dementia. Dr. Clouston, in the *Journal of Mental Science*, for April, 1863, gives a table showing the form of insanity in 282 patients who died of tubercular disease at the Royal Edinburgh Asylum. Acute mania, 12; mania, 15; monomania, 39; melancholia, 18; dementia, 153; general paralysis, 34. It will be noticed by the foregoing table that more than one-half of these cases passed into dementia, while, on comparison of the tubercular with non-tubercular cases, it is shown that only one-quarter of the latter class of cases were demented at death. It was noticed, in all these cases, that the acute stage of the insanity was of very short duration, and that the patients all manifested a decided tendency to pass rapidly into subacute mania and dementia. It has also been noticed that the prognosis as regards recovery of mental health is very unfavorable, and that apparent recoveries generally prove to be only remissions."

**Treatment of Insanity.**—Although it is not generally so regarded, insanity is one of the most curable of serious diseases if promptly cared for and treated. The mistake which is committed every day by foolish friends and relatives, of keeping secret, as long as possible, the fact of the patient's

insanity, thereby depriving him of the necessary care and treatment at the outset of the disease, is often fatal to the prospects of recovery of the unfortunate patient, who is only sent to an asylum when he has become perfectly unmanageable, and the disease has become deeply seated. It has been stated by eminent authority that if persons who were attacked by this disease were cared for as promptly as if they were suffering from an attack of dysentery or fever, eighty or ninety per cent. could be restored to health and usefulness. There is no disease, however, which develops more rapidly if not treated, and tends to induce organic degeneration which renders it incurable. From a financial point of view it pays well to restore the insane as soon as possible to usefulness and health, and thereby save the Commonwealth the cost entailed by the loss of his labor, and also the amount that has to be paid for his board and clothing, which at the lowest estimate amounts to not less than \$156 a year, or \$3 per week. Dr. Edward Jarvis, of Dorchester, Mass., who has made very laborious investigations upon the subject, in a paper entitled "The Political Economy of Health," presents the following view of the gain or loss entailed upon the State or family of an insane man by his cure, or by his remaining a lunatic for the period of life left to him after his attack. According to Mr. John Le Copelain's table, showing the average longevity of the insane from any given age, it is seen that a man of twenty years of age, if sane, has an average life of 39.48 years, while if insane he has but an average life of 21.31 years if not restored to health. Dr. Jarvis has estimated that, leaving out of sight the ten or twenty per cent. of the insane who are incurable, the average time for restoring to health the insane who apply for treatment upon the early symptoms of disease is twenty-six weeks. At \$4 per week, which was the average cost in the three State Lunatic Asylums in Massachusetts for the past year, this amounts to \$104, to which is added \$30 for each patient, for the cost of rent or interest on the value of the hospital, etc., for six months, making an average cost of \$134 for restoration to health. If not restored to health, the family or State must be at an expense of \$156 a year for 21.31 years.

and must also lose the patient's earnings for the 39.48 years which he would have made if well. The cost of the patient's support is estimated at \$2,121, while the loss of his future labor, if he becomes insane at twenty years of age, is estimated at \$2,665.37, making a total loss of \$4,786.37 if not cured; while, if cured in the average time of twenty-six weeks at a cost of \$134, there will be a gain to the family or to the State of \$4,652. The foregoing is an admirable argument for sending insane patients to be treated in the early and curable state of the disease, and, if acted upon, would reduce by a large percentage the incurable cases which are now to be found in such great numbers.

In ancient times the insane were regarded as possessed with devils, and were accordingly fastened with chains, handcuffs, and fetters, and confined in cages or dungeons, to drag out their miserable lives as best they could.

As, in the commencement of this paper, we have seen that Pinel was one of the first to properly recognize and classify insanity, so in speaking of treatment we would refer to him, in his humane endeavors and successful efforts to do away with the beating and cruel treatment of the insane, as he has elsewhere aptly been termed, "The Father of the Modern Treatment of Insanity." His pupil, Esquirol, also was the most successful of his immediate successors in carrying out Pinel's ideas in treating insanity and in advancing the scientific knowledge regarding it. The treatment of insanity has improved up to the present day, and the success which has been reached, in abridging maniacal attacks and warding off dangerous excitement, gives us to-day a much different class of patients both in behavior and appearance than could have been found fifty years ago. This change, which has taken place gradually, as the natural result of improved modes of treatment, has not been fully recognized by the profession at large, as the following may serve to illustrate: A physician of large practice visited the asylum under our charge, a short time ago, and, after having been conducted through the various wards of the institution, and noticing the women quietly sewing or reading, while many of the male patients were en-



gaged in out-of-door employments, supposing that only the quiet and convalescent patients had been shown, as is sometimes the case, desired to see the "raving and dangerous patients," and was exceedingly astonished upon being informed that the ward we had just left was the excited ward of the asylum, as the patients had been quiet and polite, and did not show the maniacal glare and ferocity of manner which he expected to see. We took this astonishment as the highest compliment which the gentleman could have possibly paid us, as our patients as a rule come from the lowest class of society, and are not accustomed to a great degree of self-control even when sane. The foregoing is a very simple illustration of what triumphs kindness and moral and hygienic treatment have achieved over the cruel, harsh, and unsympathizing methods which characterized former times. One great rule to be observed in the management of the insane is, that they are invariably to be treated with kindness and consideration. Their peculiarities should never be lost sight of, but should never be made the topic of conversation or ridicule. In the excited state of the nervous system in the insane, a careless or an unkind word is often deeply felt, and all efforts toward a cure may be rendered futile, by the patient perceiving in his physician the want of sympathy and kindness of heart which he, above all others, has a right to expect and demand from us.

The insane are as amenable to kindness, as a rule, as sane people, and will almost invariably repay it by good behavior, while the opposite course is quite as sure to counteract all our efforts in their behalf. As in all other diseases, hygienic influences must be insisted on, and pure air, pleasant surroundings, and good food, are of great importance. The mind, to be normal, must be associated with a healthy physical state, and we must, in the treatment of the insane, attend primarily to these things, and not by any means regard them as beneath our notice. Many people question the propriety of confining a patient in an asylum, private or otherwise, maintaining that, if they can afford to keep the patient at home and provide medical attendance and an attendant for

him, he is much better taken care of. This is a very mistaken idea, and one very injurious to the patient himself. One of the most marked characteristics of the insane man, is his intense egotism, if it may be so called; or, more properly speaking, it consists in the language of Dr. Blandford, in an "extreme concentration of the whole thought and ideas on self, and on all that concerns self." At home he is more or less the master of the house, and regards himself, when restrained, as a deeply-injured man, and chafes much more, and is more truly a prisoner, in his own home, than when allowed the comparative liberty of a well-regulated asylum. When in an asylum he loses or merges his identity more or less with his companions, which is an excellent thing for him, as he ceases to be the center of observation and remark, and is treated and noticed precisely in the same way as are the thirty or forty other patients who are occupants of the same ward. A very striking instance of this kind occurred in a patient of good education who, upon becoming insane, fancied himself the Supreme Being, and insisted upon exercising all the fancied prerogatives of such a being. He became very troublesome and dangerous to those about him, and was entirely absorbed in the contemplation of his own greatness, which idea was fostered by the attention he received and the private room that he occupied. He was accordingly removed from his room to a ward in the asylum containing twenty or thirty other patients, and was given to understand that the amount of his liberty and the privileges which he enjoyed would depend entirely upon his behavior. He at once perceived, and at first angrily remonstrated against, the want of attention paid to his whims and caprices, but soon understood that he was not regarded by the attendants as in any way superior to the other patients, and in their treatment of him was manifested no attention at all to his delusion. Finding his endeavors to exercise his authority fruitless, he gave up his imperious and unrestrained demeanor, and soon submitted quietly to the order and discipline of the institution, and at the present time is one of the best-behaved patients in the ward, rarely recurring to his delusion. Regarding the moral

treatment of the insane, the physician's attributes have been well defined by Drs. Bucknill and Tuke, as follows: "The physician who aims at success in the moral treatment of the insane, must be ready 'to be all things to all men, if by any means he might save some.' He must, nevertheless, have a good backbone to his character, a strong will of his own, and with all his inflections be able to adhere with singleness of purpose and tenacious veracity to the opinions he has on sound and sufficient reasons formed of his patient, and the treatment needed to be pursued toward him. With self-reliance for a foundation to his character, it requires widely different manifestations to repress excitement, to stimulate inertia, to direct the erring, to support the weak, to supplant every variety of erroneous impression, to resist every kind of perverted feeling, and to check every form of pernicious conduct."

In treating the insane, the great necessity is for better food; more amusements; which draw off the mind from the delusions which occupy it, and combat depression of mind, by bringing before it new scenes and objects; and, lastly, more freedom. We have improved the condition of the insane materially during the past few years, and have rendered a residence in an asylum less irksome and more beneficial for those who are obliged to resort to such institutions. We have abolished mechanical restraint, except in rare cases; have abolished all forms of punishments, and have improved the quality of food and clothing. The insane should be encouraged and urged to go outside of the walls of the institution of which they are inmates, as far as is practicable, when their behavior justifies this measure, for work or pleasure. In this way they are put on their honor and good behavior, and where one will occasionally escape, doing but little injury, thousands will be essentially benefited, and, in some cases, cured for life.

Out-of-door work is very valuable for patients in promoting assimilation and digestion, and strengthening the muscular system, and should be employed whenever practicable. Light work gives the patient something to think about, and



occupies his mind in a healthful manner, while being shut up constantly in-doors tends to enfeeble the body, and the mind is occupied too often in revolving the delusions which it should be the aim of the physician to banish as far as possible. As it is impossible for the majority of patients to be employed in this manner, it is desirable to find some light employment in-doors. While it is comparatively easy to find employment for women, such as sewing, knitting, washing, and making dresses, the men are not so favorably situated, as the expense of fitting up workshops is so great, that in most instances it is not considered a sufficiently valuable adjunct to justify the necessary outlay. They may be taught, however, to do light work, such as cane-seating chairs, etc., and in such ways occupy their mind and afford them some muscular exercise, however slight. The foreign asylums have systematized manual labor to a much greater extent than in this country; and some of them, as the asylum of Quatre Mares, near Rouen, do a great deal of work in all the trades. Recreation is also more indulged in than in our asylums. At the Fisherton Asylum, near Salisbury, England, which is a private institution, accommodating about six hundred patients, a separate brick building was erected for the purposes of recreation. It is one hundred feet in length, by thirty in width. At one end of the interior of this building is a stage fitted up with all the accessories for private theatricals. At the Prestwick Asylum, near Manchester, is a very large and handsomely-painted room, which is devoted to musical and theatrical entertainments. At the Lunatic Asylum at Ghent, the Hospice de Guislain, are four hundred and seventy male patients, who are variously employed in shoemaking, book-binding, combing flax, making twine, weaving cloth, and in carpenter-work and work out-of-doors. There are also rooms for music and smoking. At the asylum at Clarendon, near Paris, are six hundred patients of the paying class, for whose amusement are provided a library and billiard-room. The best of our own asylums afford, however, as good facilities for amusements as the foreign ones, if not on so extended a scale; while the condition of

the patients, and their care and treatment are, as a general rule, superior to those of the foreign asylums. The medicinal treatment of insanity consists in removing, as far as possible, all functional derangements of the system which would retard a cure, and endeavoring, as far as possible, to keep up a healthy state of the system by attending to the proper fulfillment of the functions of the body. We must relieve anæmia and hyperæmia of the brain, so far as we are able, and treat symptoms as they appear in the course of the disease. Among the most valuable remedies for use in the treatment of insanity may be mentioned opium, hydrate of chloral, hyoscyamus, digitalis, ergot, bromide of potassium, stimulants, and the use of warm baths. Opium has been called "the sheet-anchor of the alienist physician." The doses of opium require to be large, as the nervous system is singularly tolerant to large doses in acute mania and in some forms of melancholia, while, in advanced dementia and in general paralysis, the experience of observers warns us to be careful in its employment. Dr. Pliny Earle commences with twenty minims of tincture of opium three times a day, and gradually increases the dose until one drachm or more is administered three times a day. Guislain recommends large doses, but commences with two grains, which he increases to ten or fifteen grains, as required. Drs. Bucknill and Tuke relate the case of a carpenter's wife who was affected with suicidal melancholia, and was cured by the administration of large doses of morphia, and who was obliged to take eight grains of the muriate of morphia daily. When taking this enormous dose, she was cheerful and enjoyed good health, her tongue being clean and the pulse good, but when the dose was diminished she again became depressed.

The hydrate of chloral has proved to be a very valuable remedy in the treatment of insanity, often procuring refreshing sleep when all preparations of opium fail. It has been shown to be most useful in mania with sleeplessness and restlessness, in doses of from thirty to sixty grains. The great advantages that it possesses are, that it does not constipate the bowels, does not disturb digestion, the doses do

not require to be increased, as is the case with opium, and the sleep produced by it resembles natural sleep more than that produced by most other narcotics. From our own experience, we would decidedly recommend the combination of chloral with morphia, or chloral with hyoscyamus, as being preferable to either alone. In very violent cases of maniacal excitement with sleeplessness and dangerous exhaustion, and weak pulse, a dose of twenty grains of hydrate of chloral and one quarter of a grain of morphia has produced a long, natural, healthy sleep, from which the patient has awakened refreshed and invigorated, and, after a few repetitions of the dose on successive nights, the symptoms have disappeared, or have been greatly relieved. When the chloral has been given in connection with hyoscyamus in maniacal excitement and sleeplessness, fifteen grains of the hydrate of chloral and one drachm of the tincture of hyoscyamus have been administered at night, and the dose repeated in two hours if sleep was not induced, and the results have always proved the success of the treatment.

The use of digitalis has been advocated by Dr. Lockhart Robertson, and by Dr. Duckworth Williams, his successor, at Hayward's Heath, England. They claim that digitalis is a valuable sedative in both recent and chronic mania, and also when these forms of insanity are complicated with general paresis and epilepsy. The dose they employ ranges from half a drachm to one drachm of the tincture, this dose being continued for some days and then gradually decreased. Stimulants are necessary to ward off the dangerous stage of exhaustion which accompanies or follows acute maniacal excitement, and are contraindicated only when there is excessive plethora.

**Ergot in the Treatment of Insanity.**—It was proved, years ago, by the researches of Brown-Séquard and others, that ergot possessed the power of producing contraction in the vessels of the spinal cord, and accordingly it occurred to Dr. Browne that it might possess a similar control over the vessels of the brain, and might thus be made to modify or remove the active cerebral congestion, which is an attendant upon so



many phases of insanity. Upon thorough investigation, he found that there were three varieties of insanity in which it was eminently useful, namely, recurrent mania, chronic mania with lucid intervals, and lastly, epileptic mania. Dr. Browne, and other observers who have adopted the use of ergot in the treatment of insanity, have found that in the varieties above mentioned, it was almost uniformly successful in reducing excitement, in shortening the attacks, in widening the intervals between them, and sometimes in preventing their recurrence entirely, and in warding off the dangerous stage of exhaustion by which maniacal excitement is so often succeeded. The way in which ergot operates upon the contractile coats of the vessels has been proved to be by its influence upon the non-striated muscular fibers and cells contained in their coats, thereby exercising a controlling power over the caliber of the intracranial vessels. In the three varieties of insanity before referred to—in recurrent mania, in chronic mania with lucid intervals, and in epileptic mania—we find that the lesion consists essentially in cerebral hyperæmia. We find, although the symptoms differ in these three forms of mental disease in which ergot is useful, that there is present in each form increased arterial pulsation, flushing of the face, suffusion of the eyes, dryness of the mouth, and cephalalgia. The disappearance of these phenomena in the intervals of the paroxysms, proves that they are dependent upon functional and not organic changes in the brain, in which latter case we should not expect to find any marked efficacy from the use of ergot, and indeed we often meet with instances in which the controlling power of ergot is, after a time, lost, as organic degeneration gradually follows as a sequence upon repeated attacks of mania. In epileptic mania, it will be found that a combination of bromide of sodium with ergot will materially aid the action of the latter in widening the intervals between the fits, and in modifying the attacks when they occur. This combination will also often arrest paroxysms in the incipient stage. The stage of excitement which often precedes and ushers in the attack, and which sometimes succeeds it, is markedly diminished by

the combination of the bromide of sodium and ergot. The bromide of sodium will be found to be preferable to the bromide of potassium, as it is pleasanter to the taste and causes less constitutional disturbance than the latter when given in large doses. Dr. Browne remarks that "it is in epileptic mania that ergot has been found pre-eminently valuable in allaying and abolishing excitement, and in conducting to a healthier tone of mental action. In the outbursts of violent agitation, which precede or follow a fit or group of fits, which occasionally take their place, and which have been pronounced by all authorities to be of so dangerous a character, it exerts a prompt and energetic effect. We may presume that these outbursts are dependent upon a want of equilibrium in the intracranial circulation, primarily disturbed by the epileptic seizure or condition. The distention of the vessels, which succeeds their spasmodic contraction and produces coma, subsides so far as to allow the resumption of activity by the higher centers, but only in an irregular and distorted way. And we may presume, further, that the soothing and rectifying effects of ergot are due to its power of re-establishing that disturbed equilibrium."

A thorough trial of the ergot treatment has satisfied the writer of its efficacy in asylum practice, and the following clinical cases will serve to illustrate its beneficial action. The doses of ergot used in the following cases have been from 3 ss. to 3 i. of Squibbs' fluid extract, three times a day, and in cases in which ergotine has been employed, from 5 to 10 gr. have been given. No unpleasant effects have ever followed even prolonged administration of the ergot, and from our experience with it, it would seem that the danger of injurious effects from the continued use of ergot has been greatly overrated by the majority of the profession. Dr. Browne, who has used the ergot treatment for many years in many hundreds of cases, says: "Indeed, so little have injurious effects of any kind followed even the prolonged exhibition of what might be termed enormous doses of ergot, that doubts might have arisen as to whether it were possible to produce that train of symptoms described as ergotism,

by means of the medicinal preparations of *secale cornutum*."

CASE I.—Miss E. K——, with recurrent mania, admitted to the asylum Jan. 11th, 1873, aged 22 years; occupation servant, native of Ireland. Was very noisy and maniacal when admitted. Was very incoherent in speech and boisterous; had no realization of her condition or surroundings. She entertained the idea that people were trying to kill her and get her property. She destroyed her clothing, broke the windows, did much damage to the furniture, and imagined that she saw snakes and devils in her room at night. She required restraint very often, and continued in this excited state for over a year, with no mental improvement. She commenced to take the fluid extract of ergot in 3 i. doses three times a day, on the 15th of June, 1874, and had only taken a few doses before beneficial results were very apparent. The excitement subsided, and she became quiet and peaceable. The congestion of the head and face, which was very marked, has nearly entirely disappeared. Her pulse was reduced from 145 to 90. The temperature in the axilla from  $99\frac{5}{16}^{\circ}$  to  $98^{\circ}$ , and her tongue, which was thickly furred, presents a normal appearance. At the present time she assists in the washing, and is very polite and quite cheerful.

Miss M. K——, a native of Ireland, aged 28 years, was admitted to the asylum June 11th, 1874. Form of mental disease, chronic mania with lucid intervals. On admission, was very violent and abusive, requiring restraint; would strike and bite the attendants if not restrained. Her face was deeply congested, eyes injected, tongue coated with a thick white fur, pulse 130, and temperature  $99^{\circ}$ . Having continued in this excitable state for some days, with no evidence of improvement, was ordered 5 i. of the fluid extract of ergot three times a day. By the 24th of June, she began to show decided signs of improvement, and in place of being filthy and abusive in language and conduct, was polite and neat in her habits. She also began to sleep at night, which she had not done before, although medicine had been given for that purpose.



Her pulse was lowered to 85. Her temperature decreased, the suffusion of the eyes disappeared, and at the present time, April 28th, she has had no relapse of maniacal excitement.

E. Z——, a native of Germany, aged 27, a mechanic, was admitted to the asylum June 12, 1874, suffering from an attack of acute mania, caused by overwork and mental anxiety. Had always been a healthy man, and no trace of insanity in the family history. Upon admission, was very noisy and maniacal, and his great strength rendered restraint necessary, as he endeavored to injure every one about him. He was ordered a warm bath, which relieved him for about half an hour, when he again became maniacal and dangerous. Was given chloral and hyoscyamus, and passed a restless night. In the morning, he presented very much the same appearance as on the preceding evening. Face and eyes suffused and congested, pulse 100 and temperature heightened; tongue thickly coated and mouth dry: was put on 3 i. of the fluid extract of ergot three times a day, and chloral and hyoscyamus at night. In a few days, the excitement began to subside, and, August 1st, was comparatively quiet. Aug. 15th, pulse 80, temperature  $97\frac{8}{10}$ , appearance of tongue normal. Has remained quiet up to the present time. Appetite good, sleeps well, and is cheerful, although anxious to get back to his family.

Miss S. H——, native of Ireland, aged 25 years, was admitted to the asylum Sept. 2, 1872, with epileptic mania. From the time of admission to June, 1874, had a great many epileptic seizures, which were preceded and followed by attacks of maniacal excitement, which rendered her a dangerous patient. Had been under restraint many times. July 24, 1874, became very noisy and excited, as is her habit before her fits, threatening to kill the patients and attendants. The eyes were suffused, mouth dry, pulse 140, and tongue furred. Was put on 3 i. doses of fluid extract of ergot three times a day. After taking the ergot for two days, she became quiet, and the epileptic seizure which followed was very mild as compared with preceding ones. The ergot was

continued, and since that time she has had no return of the maniacal excitement. The fits have decreased in frequency and intensity, and are not followed, as formerly, by any mental excitement. Her physical condition has also been markedly improved since she has taken the ergot. The pulse is now 75, and the temperature in the axilla  $98^{\circ}$ ; eats and sleeps well, and assists in the work.

M. C——, native of Ireland, aged 30, was admitted to the asylum about two years ago, with epileptic mania. He was a strong, muscular man, and had been subject to epileptic fits for some years. For a period of from a week to two or three days preceding the fits, was entirely unmanageable and a very dangerous man to deal with. Required to be restrained. He was also accustomed to have a period of maniacal excitement following the epileptic seizures, which lasted for a variable period, during which time his pulse would range from 100 to 120, and the face would be deeply congested. Was put on 3 i. doses of fluid extract ergot three times a day, and this dose continued for a period of two months, sometimes omitting the medicine for a week, and then resuming it. The fits immediately decreased in frequency and intensity, and the maniacal excitement entirely disappeared. Pulse and temperature became normal. He expressed a desire to work, and, a short time ago, returned in comparatively good health to Ireland.

Several other cases have exhibited as marked improvement under the ergot treatment as the foregoing, but want of space forbids their insertion.

Last, but not least, may be mentioned the use of warm baths, which are of inestimable value in asylum practice. The tranquillizing effect of a warm bath in relieving cerebral irritation, and in promoting sleep, is often wonderful, after all other means have failed. Patients with excessive maniacal excitement, hot head, dilated pupils, tongue thickly furred, and a high temperature in the axilla, have repeatedly passed a comfortable night, after having remained for half an hour in a warm bath at a temperature of  $100^{\circ}$ . This, in connection with a dose of chloral and morphia or hyoscy-

mus, will often suffice for the relief of acute mania if repeated on successive nights, if good, refreshing sleep can be induced. Enough has been said, however, to show clearly that we can lay down no definite plan of treatment for any number of cases, but must, in every instance, if we expect to accomplish a cure, study the constitution and idiosyncrasies of our patient, and treat him accordingly. By so doing, we shall often have the satisfaction of seeing apparently hopeless cases restored to society, and families rendered happy which had been broken up by the visitation of this fearful disease.

A microscopical examination of blood from insane patients, as compared with an examination of blood from the same number of healthy individuals, revealed in the blood of the insane a condition of leucocythæmia, or a marked increase of the number of white corpuscles. This condition has also been remarked by other observers, and Dr. Charlton Bastain and Dr. Blandford have described a plugging or stopping up of the cerebral vessels by small embolic masses composed of collections of white corpuscles, in cases of acute mania and delirium. It has also been found that during the period of maniacal excitement, that there is a marked diminution of fibrine in the blood, and that during convalescence the amount of fibrine is increased to the normal standard. These results have been confirmed by the recent researches of Hittorf, Erlenmayer, Michea, and Dr. Marcet. Examination of the urine of the insane has shown that in acute mania there is an excessive elimination of the phosphates as a rule, while in dementia, general paralysis, and chronic mania, the amount of phosphates eliminated is generally below the average. There has been some difference of opinion in different observers as to the reaction of the urine in insanity, Erlenmayer claiming that it is generally alkaline in recent cases of mania, while Dr. Sutherland, who has paid great attention to the condition of the urine in insanity, found that in 125 cases of recent mania, the urine was acid 101 times and alkaline 13 times, and gave a neutral reaction once. In our investigations, we have found the reaction to be acid in the majority of cases of those affected with acute and chronic mania and dementia.



The small amount of time at the disposal of a physician in charge of an asylum, and the difficulty of making an extended course of investigation in the analysis of blood and urine, which is so desirable in the study of insanity, and also the difficulty of making microscopical researches, are causes which have combined heretofore to deter the superintendents of asylums in this country from giving to the profession the results of their valuable experience, and it is, therefore, to be hoped that the time is not far distant when every asylum shall possess the services of a skilled pathologist and chemist.

#### Cases Illustrating the Treatment of Insanity.

CASE I.—T. B., male, aged 30, married, a native of England, and by occupation a photographer. Admitted to asylum with acute mania, resulting from abuse of alcohol. No insane relations. Upon admission, said he left England to get rid of his wife, who tormented him. Said he knew he was insane when he left, but that destitution and hard drinking had made him worse. Toward night, became acutely maniacal, and very boisterous. Tore up everything within reach, and was incoherent and vulgar in speech. Had no appreciation of his condition or surroundings. Quoted continually from Shakspeare, and showed that he had received a liberal education. Said he burned Spurgeon's Tabernacle. Eyes suffused and pulse full and bounding. Was ordered warm baths every night, lasting half an hour, with chloral and morphine at bed-time, the dose of chloral being twenty grains, combined with one-fourth grain of morphine. He was fed liberally, and, as he was always quiet in the morning, was ordered *fl. ext. of ergot*, in *3i.* doses, twice every afternoon when he became excited. Under this treatment, he quieted down, and he soon began to appreciate his condition, and take an interest in his surroundings. He improved gradually, and was discharged recovered, and sailed for London, August 3, 1874.

CASE II.—M. B., female, aged 39, single, native of Ger-

many. Admitted to asylum May 24, 1874, with melancholia, resulting from syphilis. Upon admission, was uneasy and restless at night, and would get out of bed, suspicious of injury from unseen persons, who, she said, were anxious to kill her. Was depressed, melancholy, and very suspicious of all about her. Imagined her food was poisoned, complained of great pain in the head, and was pale and anæmic; ate and slept but little. Was put on a nourishing diet, with milk punch, and was given the iodide of pot., fifteen grs. three times a day, and twenty grs. of chloral, with tinct. hyoscyamus, at bed-time. Upon this treatment, her general health improved very much. She began to eat and sleep, but would sit alone all day and cry over imaginary troubles. After a few months began to evince a desire to work, and was sent to the sewing-room, where she sewed well, but still retained her delusions. She improved slowly, but surely; her delusions gradually disappeared, she became more cheerful and happy, and was discharged recovered, April 18, 1875, and soon after sailed for Bremen, in good physical and mental health. This is a very interesting and unusual case, as syphilitic insanity is a very rare disease, not more than one or two per cent. of all cases of insanity presenting this complication. The most frequent form of syphilitic insanity is dementia. The above-mentioned case was probably the result of a simple irritation of the central nervous system, due to cerebral anæmia. The only remaining case of syphilitic insanity, where a clear syphilitic history was obtained, which the writer has met with, was a woman aged twenty-nine, a native of France, with no insane relations. This patient's limbs were covered with secondary syphilitic sores, and the head was affected with gummy tumors. She soon passed into profound dementia, associated with epileptiform convulsions. She was treated with a combination of mercury and the iodide of potassium, but remains a case of chronic dementia.

CASE III.—T. C., male, aged 25 years, single, a native of Ireland. Admitted to asylum March 21, 1874, with melancholia, bordering on dementia, caused by intemperance and vicious indulgences. Upon admission, denied

insanity in the most positive manner, but complained of severe pain in the back of his head, and over the frontal region. The faculties of the mind were much enfeebled. Would burst out laughing, and laugh incessantly for some minutes, and upon being questioned subsequently, had no remembrance of doing any such thing. Had a delusion that he had been reduced to half his size by divine assistance. Saw visions at night. Was feeble and anæmic. Had attacks of mental excitement about once a fortnight, in which the bodily temperature would be much increased, and the eyes suffused. At such times was very homicidal in his impulses, requiring, often, seclusion in his room. Was put on nourishing diet and tonics, with fl. ext. ergot, ʒi. three times a day, and warm baths at bed-time, when he could not sleep. There was no perceptible mental improvement for some months, but the general health was much improved, and he slept much better. The attacks of cerebral congestion decreased in frequency and intensity and finally ceased altogether. He began to work in the hall, and his sleep ceased to be disturbed by visions. His appetite became good, his mental faculties began to be restored to their normal state, and his delusions disappeared. He was discharged recovered, September 17, 1875, with no trace of insane ideas or delusions, his conduct for some months previous to his discharge having been reasonable and quiet. It is proper to mention that the ergot in this and other cases was never continued for more than two or three weeks without suspending its use for a week or two, and using it in this way, no injurious effects have ever followed its employment.

CASE IV.—J. C., male, aged 26 years, single; occupation, farmer, nativity, Ireland. Admitted to asylum April 2d, 1874, with acute mania, the result of ill-health and overwork, associated with intemperance. Upon admission was thin and anæmic, and was incoherent and rambling in speech. Said he was married to the Queen of Heaven. Was sleepless, ate but little, and was very destructive in his impulses, tearing up clothing, etc. The eyes were injected, and the pupils widely dilated. Was given bromide of sodium in fifteen

grain doses, three times a day, which was increased to twenty grains, with full doses of chloral and tinct. hyoscyamus at bed-time. Full nourishing diet. Soon became quiet and polite, and with the increased health and strength his mind became normal, and his delusions disappeared. He worked well on the grounds of the asylum, and was discharged recovered, December 28th, 1874. He obtained a good situation on a farm, and has had no return of his insanity.

CASE V.—M. F., male, aged 23 years, single; occupation, blacksmith, native of Ireland. Was admitted to asylum September 24th, 1874, with recurrent mania. Upon admission was depressed and sullen, would not answer questions. His tongue was thickly furred and bowels constipated; was ordered a laxative and warm baths at bed-time, as he said he did not sleep well. In a few days the eyes became injected, the pupils dilated, head hot and speech wild and incoherent, and movements restless and excited. Said he had a worm inside of him that was eating him up. Thought the food was poisoned, and refused to eat. Was ordered warm baths, fl. ext. ergot  $\mathfrak{z}$ i. three times a day, and chloral twenty grs., with one quarter grain of morphine combined, at bed-time. In a few days the cerebral congestion abated, and he went on until the next month, when he had a recurrence of the mania, which was preceded a few hours, as before, by melancholia and constipation. The same treatment was employed, and the maniacal attack lasted but twenty-four hours. The ergot was continued through the lucid interval, and was discontinued at the end of four weeks, as he had no symptoms of another attack. He went until January, 1875, when he had a recurrence of the mania, which was treated as before, with the addition of bromide of sodium, in twenty grain doses three times a day. This was his last attack. He improved steadily in health and strength, his delusions disappeared, he began to show an interest in his surroundings, and worked on the grounds of the asylum until the latter part of July, 1875, when he was discharged recovered.

CASE VI.—J. N., female, aged 20, single; occupation, servant, native of Germany. Admitted to asylum Janu-



ary 27th, 1875, with acute mania. Previous to this attack had been a remarkably well-behaved and quiet girl, and had been reasonably healthy. Upon admission, was acutely maniacal, with rapidly changing delusions. Saw devils, snakes, and angels in rapid succession, and said the Virgin Mary visited her every night in her room. Pulse rapid, tongue thickly furred, bowels constipated and eyes injected, with the pupils dilated. Destroyed everything within her reach, and tore up three of the strongest camisoles which were in the house, as soon as she was confined in them. The display of muscular strength which she exhibited was something remarkable. She was put in warm baths, with chloral and morphine at night, but did not sleep. Refused food, and was so violent, that the attempt to feed her artificially was for the time abandoned. None of the usual remedies seemed to quiet her in the least, and she seemed likely to die of exhaustion from the violence of her mania, when she was ordered the bromide of camphor, in doses of four grains three times a day, in capsules. After the third day's trial, the temperature in the axilla became reduced from 102° to 99½°. The pulse was reduced in frequency, and the suffusion of the eyes disappeared. The pupils were reduced to their normal size. She began to sleep and eat, and at the end of ten days was quiet and tranquil. The doses were reduced to two grains three times a day, as the mania decreased, and were continued for about a month. The mental faculties improved, the appetite returned to its normal condition, she began to take exercise in the open air, and soon desired to go into the sewing-room. She worked well, and was discharged recovered, September 9th, 1875. From the writer's experience with the use of bromide of camphor, he believes it to be an excellent sedative of the cerebral system, and at times a decided hypnotic. In epilepsy, and mania with hysterical symptoms, it has acted as a nervous sedative and antispasmodic with good effect, in doses of from two to four grains three times a day.

CASE VII.—C. G., female, aged 18 years, single, servant, native of Ireland. Was admitted to asylum with acute

mania, was noisy and boisterous, and a dangerous patient. Was homicidal in her impulses, and required mechanical restraint to prevent her from injuring those about her. Pupils widely dilated, head hot, and complained of intense pain in frontal region at times. Was incoherent in speech, and had no appreciation of her condition and surroundings. Was thin, and ate and slept but little. Was ordered warm baths at a temperature of 100° every other afternoon, with cold compresses to the head at the same time, and chloral and morphine in full doses at bed-time. She was also given thirty grains of the bromide of sodium twice a day. In a short time she became quiet, and remained so for three months, during which time she had various delusions, and retained her homicidal impulses. At the end of that time she became acutely maniacal, and was put on fluid ext. of ergot and warm baths, with cold applications to head, and chloral and hyoscyamus in full doses at bed-time. In a week she began to improve, and her appetite, which had been poor since her admission, became good. She realized her situation, and thanked the doctor and the attendants for their care of her. She no longer wished to injure those about her, and as she soon manifested a desire to work, was placed in the sewing-room, where she continued to improve daily. Her insane ideas disappeared, and she was discharged recovered, in January, 1875. Up to the present time she has had no return of insanity, and is regarded as an excellent laundress at the place at which she is employed.

CASE VIII.—E. K., female, aged 24 years; single; occupation, servant; native of Ireland. Admitted to asylum with suicidal melancholia, was trying continually to escape. Had a great many delusions of fear and persecution. Said everybody wanted to kill her, and so she had better kill herself. Got very angry at trifles, and swore at the patients, and struck them if not restrained. Had no appreciation of her mental condition. Said that the devil was inside her. Was very filthy and obscene. Was put on a full nourishing diet, with opium in gradually increasing doses, and warm baths with bromide of sodium, thirty grains at bed-time. She

was kept on this treatment for some weeks with gradual improvement. The opium was carried to the extent of one drachm of laudanum, three times a day, with excellent effects. The appetite was stimulated, and she became cheerful and realized her condition and surroundings. She slept well, and the desire to commit suicide disappeared. The amount of opium was gradually decreased, as the mental condition improved, and was finally withdrawn altogether. She worked well in the ward, and was transferred to the sewing-room, where she was of great service. She was discharged recovered, January 6th, 1875, and remains well, up to the present time.

CASE IX.—E. B. M., female, aged 24 years; single; occupation, dressmaker; native of Germany. Admitted to asylum May 27th, 1874, with acute mania. Was very much excited, eyes injected and pupils widely dilated. Head hot and face flushed. Had slept none for a week, and had eaten nothing for the same length of time. Was given a warm bath and milk punch, and at bed-time, twenty grains of chloral with one-fourth grain of morphine. Slept part of the night. The next day was maniacal, and imagined all the food was poisoned. Was fed on milk punch, and warm bath, with chloral and morphine, was repeated. She slept better than on the preceding night. During the next three weeks the same treatment was persisted in, resulting in gradual improvement. She retained the delusion respecting the food, and tried continually to escape. She had new attacks of mania, recurring about once in three days at night, when she would see visions of angels, etc. She was put on doses of fluid ext. ergot  $\mathfrak{z}$ i. three times daily, with decided improvement. She improved rapidly. Began to eat all that was given her, slept quietly all night and as she soon evinced a desire to work, was transferred to the convalescent ward, and allowed to sew, which she did very well. She continued to improve, and was discharged recovered, November 21st, 1874, when she sailed for Germany, with no trace of insanity remaining. She has been heard from since her arrival in Germany, and is doing very well at her trade of dressmaking.

CASE X.—H. P., male, aged 36; single; occupation, architect; native of England. Admitted to asylum with acute mania, which had followed repeated attacks of delirium tremens. Nervous system very much broken down. Thin and anæmic, appetite poor. Slept but little. Was put on nourishing diet, and pills of phosphide of zinc, with the extract of *nux vomica*, the combination being one-tenth of a grain of the phosphide of zinc, with one-fourth grain of the extract of *nux vomica*. He took these pills three times a day, with pepsin and bismuth before meals, as the digestion was impaired. He had warm baths, and chloral and hyoscyamus in full doses at bed-time. He soon began to improve. The hallucinations of sight and hearing with which he had been affected, disappeared. The general health improved, and in two months from the time of admission, was discharged recovered, having gained very markedly in flesh while in the asylum.

CASE XI.—A. P., male, aged 16; native of England, admitted to asylum in a state of exhaustion, from acute mania threatening death. Tongue and lips dry and black; eyes deeply injected and pupils widely dilated. Had not eaten or slept for over a fortnight; was acutely maniacal although so much exhausted; was put to bed and given a full dose of brandy, which was followed by a dose of chloral and morphine. He slept part of the night. The next day he was freely stimulated, and fed with beef essence and eggs beaten up raw. This treatment was followed up for a week with chloral and morphine at bed-time with the happiest results. He became quiet, and slept well. The sordes disappeared from the teeth and tongue, and he asked to see his mother, and recognized her when she came to see him. Talked incoherently for some time, but realized his condition and surroundings in his lucid intervals. Was put on phosphide of zinc in one-tenth grain doses three times a day with good results. The appetite increased, the mental faculties improved, and he continued to convalesce up to October 3d, when he was discharged recovered. The cause of the insanity was thought to be immoderate use of tobacco, which acted very injurious-



ly upon a defective organization and weakened nervous system, inherited from his father, who was an intemperate man, and died of phthisis. Many more cases might be noted, but want of space forbids their insertion. The foregoing cases illustrate the necessity of repressing cerebral excitement, inducing sleep, by means of which the brain cells are renovated, and restoring the functions of the body, which are often disordered in mental disease. In addition to these measures, if we provide cheerful surroundings, new objects of attention and interest, and can induce a healthy train of thought, we shall very often have the pleasure of seeing our patients make a good recovery.









